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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,710	10/10/2006	Gerald A. Daniel	9052-235	1603
20792 7590 04/04/2008 MYERS BIGEL, SIBLEY & SAJOVEC PO BOX 37428 RALEIGH, NC 27627				
EXAMINER				
BOMAR, THOMAS S				
ART UNIT		PAPER NUMBER		
3676				
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04/04/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/563,710

**Applicant(s)**

DANIEL ET AL.

**Examiner**

Shane Bomar

**Art Unit**

3676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-18 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 06 January 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because Figures 7 and 8 each appear to show four different drawings that should be labeled as separate figure numbers (i.e., 7a, 7b, etc.; which would then require a correction to the brief description of drawings). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claim 14 is objected to because of the following informalities: claim 14 refers to claim 8, which is a method; perhaps it was meant for this claim to depend from claim 9 instead. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0108785 of Slaughter, Jr. et al in view of US 3,537,518 of Sullivan et al.

Regarding claims 1, 2, and 9, Slaughter et al teach a method for drilling a bore through a target comprising: advancing a drill bit 10 into the target 6 along a direction of advancement that is from right to left in Figure 1; and injecting a drilling fluid in the direction of advancement through at least one aperture (not shown) in the at least one cutting element 27 of the drill bit (last sentence in paragraph 0025); wherein as the bore is drilled waste material is directed in the direction of advancement via the fluid since the fluid is said to lift the cuttings from the conduit

7. However, it is not specifically taught that the drilling fluid is a gas.

Sullivan et al teach a method and bit for drilling in a subterranean formation similar to that of Slaughter et al. It is further taught that the drilling fluid can be a gas, such as air (col. 1, lines 5-7). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to try using air as the drilling fluid of Slaughter et al, as the drilling fluid was not specifically defined and as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp.

Regarding claims 3 and 4, a ready made bore 7 is provided having an existing diameter less than the internal diameter in the target; and directing substantially all of the waste material along the ready made bore during the step of advancing the drill bit (Fig. 1; last sentence in paragraph 0025 of Slaughter et al).

Regarding claim 5, since gas is the drilling fluid of the above combination, the drilling must be dry.

Regarding claim 8, the dimensions of the drill tip appear to be inherently selected for providing consistent particle size, having a largest cross-section below a predetermined threshold limit, of ejected waste material (Figs. 1 and 2 of Slaughter et al).

Regarding claim 10, the cutting element is arranged for cutting a bore having an internal diameter wider than an existing bore in the target and along which the drill bit is advanced (Fig. 1 of Slaughter et al).

Regarding claim 11, a drill tip includes the cutting surface and a shaft portion 15 for connecting the drill tip to a drill device 1 (Fig. 2 of Slaughter et al).

Regarding claims 12-14 (claim 14 as best understood to depend from claim 9), the cutters 21 have progressively larger cutting portions, wherein the smallest cutting portion is disposed at

a forward region and acts as a pilot and chip breaker since it encounters material in the ready made bore 7 first (Fig. 2 of Slaughter et al).

Regarding claims 15 and 16, an air passage is provided through the shaft portion 15 that directs the gas first to a rear portion internal to the bit and then externally through the aperture in the bit between the outer diameter of the shell and the inner diameter of the bore 7 (Figs. 1, 2, 4 and 5 of Slaughter et al).

Regarding claim 17, connecting means are provided on at least one of a rear portion of the drill tip and/or a forward region of the shaft portion for securably connecting the tip and shaft portion together (Figs. 2 and 3 of Slaughter et al).

Regarding claim 18, the combination of Slaughter et al and Sullivan et al also teach a drill, for use with a drill bit 10 arranged for drilling a bore through a target 6, comprising: a rotor shaft 2 arranged to rotate when driven; a motor in rig 1 arranged to drive the shaft; connection means 16 for connecting the drill bit to the rotor shaft; a gas inlet arranged to receive pressurized gas from a pressurized gas source (last sentence in paragraph 0025 of Slaughter et al); and gas directing means arranged to inject gas from the inlet to the drill bit thereby providing a directing gas flow in a direction of advancement as the drill bit drills the bore since the fluid is said to lift the cuttings from the conduit 7.

6. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slaughter et al in view of Sullivan et al as applied to claim 1 above, and further in view of US 5,580,188 of Nowak.

The combination applied to claim 1 above teaches a method that comprises drilling through a ready made bore 7. However, it is not specifically taught that two different materials

are drilled through simultaneously, such as a pipe and the material of the formation around the pipe.

Nowak teaches a method for drilling a horizontal bore similar to that of the aforementioned combination. It is further taught that as the bore is drilled, an existing pipe 10 and the surrounding formation are simultaneously bored (Figs. 1 and 2). Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to try the method of Slaughter et al and Sullivan et al in the existing pipe of Nowak, as a person with ordinary skill has good reason to pursue the known options within his or her technical grasp.

#### ***Conclusion***

7. The prior art made of record on form 892 and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is (571)272-7026. The examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shane Bomar/  
Examiner, Art Unit 3676